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peculiarities. As compared with littoral species, those of deep water are more variable, being often irregular in shape or ornamentation, *Quadrula*, for example, lacking the regular arrangement of the plates of the shell. They are also of larger size, and are more transparent, being less heavily charged with salts of iron and manganese, which cause the brownish and purplish tints of the shell. The contractile vacuoles are less active, as they are in those species also which inhabit sea-water, and the capacity of encystment seems in large measure to have been lost. Starch grains are frequently found in the protoplasm, though no *Zoöchlorellæ* were detected. The author suggests that diatoms may be retained within the protoplasm for a considerable length of time undigested in a temporary symbiotic relationship. On account of the great similarity of the abyssal *Rhizopoda* of the different lakes not at present connected, the separate origin of these faunas from the common littoral group is not accepted, and the idea is advanced that they represent a relict fauna of the preglacial or glacial period.

C. A. K.

A New Colonial Flagellate.—The Illinois State Laboratory of Natural History has recently issued a bulletin¹ on *Platydorina caudata*, an interesting new genus of the family Volvocidæ, described by C. A. Kofoid. This is a colonial form of sixteen or thirty-two biflagellate cells arranged in a horseshoe-shaped cœnobium which bears three or five tails, formed by the envelope at the posterior end. The cœnobium is flattened, and is slightly twisted in a left spiral. The cells appear to be arranged in one layer, and the two faces of the plate are exactly alike, as alternate cells upon either face bear flagella. In development the young colonies pass through a *Gonium* and a *Eudorina* stage and subsequently flatten, so that the cells of the two faces are regularly intercalated. This genus presents the most pronounced type of functional and structural polarity, and exhibits a greater degree of axial differentiation than any other genus of the family. The organism has been found in late summer and fall months for four years past, and has occurred in the waters of the Upper Mississippi, Illinois, and Wabash basins. The paper contains a key to colonial Volvocidæ.

¹ Kofoid, C. A. Plankton Studies. III. On *Platydorina caudata*, a new Genus of the Family Volvocidæ, from the Plankton of the Illinois River. *Bull. Ill. State Lab. Nat. Hist.*, vol. v, pp. 419-440, Pl. XXXVIII, 1899.